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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,714	07/20/2000	Luke Matthew Browning	AUS9-2000-0277-US1	3354

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EXAMINER
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STEELMAN, MARY J

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/620,714

Applicant(s)

BROWNING ET AL.

Examiner

Mary J. Steelman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 July 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-25 are pending.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-6, 11-18, & 23-25** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,240,529 to Kato.

#### **Per claims 1, 13, & 25:**

Kato disclosed a method, apparatus (col. 6, line 11) and a program recorded on a recording medium (col. 7, line 5) for debugging a process and storing state information.

-initiating debugging of a process; ((Col. 7, line 15, "When debugging is started...");

-saving a process state in response to a first event to form a stored process state; (Col. 7, lines 65-66, "storing a debugged state into a file if a certain event occurs.");

-retrieving the stored process state in response to a second event; (Col. 8, lines 34-35, "state restoration unit reads in the file and restores the debugged state.")

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-reinitiating debugging from the stored process state. ( Fig. 4, Execution upon restoration.)

**Per claims 2 and 14:**

-first event occurs periodically. (Col. 6, lines 14-19, "storage...for...debugged state...can be designated at an arbitrary point of time...")

**Per claims 3 and 15:**

-process state is saved in a checkpoint data structure. (Col. 6, lines 30-31, "debugged state is stored, a state storage file...")

**Per claims 4 and 16:**

-checkpoint data structure is a checkpoint file. . (Col. 6, lines 30-31, "debugged state is stored, a state storage file...")

**Per claims 5 and 17:**

-checkpoint data structure includes a process descriptor for the process. (Figures 4 & 6, State Storage File Name, and col. 5, lines 43-45, "storing a state storage file name and the situation upon the storage in a correlated condition into a storage situation management file...")

**Per claims 6 and 18:**

-process has control over at least one child process and the checkpoint data structure includes a process descriptor for each of the at least one child process. (Col. 8, lines 16-19, "a function to manage a situation upon storage of a debugged state is further added...")

**Per claims 11 and 23:**

-the process state is saved when the program is in a stopped state. (Col. 7, lines 65-66, "storing a debugged state into a file if a certain event occurs.")

**Per claims 12 and 24:**

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-the stopped state is at a breakpoint. (Col. 7, lines 37-38, "A break point at which execution of a program is interrupted...")

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 7-9 and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent 6,240,529 to Kato, and further in view of U.S. Patent 5,560,009 to Lenkov et al.

Kato disclosed an invention to debug and save state to a file, allowing resumption. Kato failed to provide information on data type descriptors, instance descriptors, and data block corresponding to an instance descriptor.

However, Lenkov described an invention that generated symbolic debug information, including creating a debug data structure (col. 6, line 62), and (col. 7, lines 33-48) including various information...debug name and type tables, a table of name strings, and object file symbol table. Col. 8, lines 39-46, "The core object file class is used to read common object file data structures...includes access routines to look up symbols in symbol tables... (Col. 16, lines 57-67), "the dtab class includes member for holding state during iterations...The classes, data structures, variables and functions which comprise the dtab... (Col. 17, lines 55-60) blocktab is a derived class of dtab. Blocktab is the base class of all source blocks... (Col. 25, lines 46-51) The output object file interface creates a new object/debug file and stores...debug information."

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Also, (Col. 26, lines 20-21) "output object file interface is implemented in the form of classes...instantiations..." Also, (Col. 26, lines 56-58) "the preprocessor creates a source file descriptor table, a procedure descriptor table, a class descriptor table..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kato's invention to debug, store state information, and restore state, by including Lenkov's invention that processed debug information, because it arranges symbolic debug information for storage and retrieval in a meaningful manner for efficient diagnostics..

6. **Claims 10 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,240,529 to Kato, and further in view of U.S. Patent 6412106 to Leask et al..

Kato disclosed an invention to debug and save state to a file, allowing resumption. Kato failed to provide information regarding modifications prior to resuming a debug process. However Leask disclosed a debugging invention that allows for modifying values while the program is suspended.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kato's invention to debug and store state, by including the features in Leask's invention that allow for modifying values because it would create a quicker interactive debug session, saving time by not requiring a start from the beginning of a program.

**Per claims 10 and 22:**

-modifying at least one register or memory variable before resuming debugging from the stored process state. (Leask, col. 12, lines 55-56, "capability to modify values stored in variables, while the application program is suspended.")

***Conclusion***

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7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5870607 to Netzer, (Allows for replay portions, entire program need not be run to support further test and debug.)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The examiner can normally be reached Monday through Thursday and alternate Fridays, from 7:00 A.M. to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 308-4789.

The fax phone numbers are (703) 746-7240 for regular communications and (703) 746-7239 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MS *MS*

1/23/2003

*Gregory Morse*  
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